

## CLAIMS

1. An interface (10) for supplying power to a load (14) from an electrical power supply network (12) comprising:

- 5                   - a rectification stage (18) comprising an autotransformer (40) equipped with at least one primary winding (44A, 44B, 44C) designed to be connected to the power supply network (12); and
- a power supply signal conditioning stage (20) having an output (28) supplying power to the load (14), which power supply signal conditioning stage
- 10 (20) includes a power module (22) for conditioning the power supply signal connected at the output of the rectification stage (18) and a control module (24) designed to control the power module (22),

                    wherein the autotransformer (40) includes at least one additional winding (62A, 62B, 62C; 64A, 64B, 64C) connected to the control module (24) to

15 supply it with electrical power, the or each additional winding (62A, 62B, 62C; 64A, 64B, 64C) being magnetically coupled to at least one primary winding (44A, 44B, 44C) of the autotransformer (40).

2. The power supply interface as claimed in claim 1, wherein the

20 autotransformer (40) is a polyphase transformer, and wherein it includes at least one additional winding (62A, 62B, 62C; 64A, 64B, 64C) provided for each phase of the transformer.

3. The power supply interface as claimed in claim 2, wherein the

25 autotransformer is a transformer with six-phase output (40).

4. The power supply interface as claimed in any one of the preceding claims, wherein the control module (24) includes a signal shaping module (32) connected to the or to each additional winding (62A, 62B, 62C; 64A, 64B, 64C).

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5. The power supply interface as claimed in any one of the preceding claims, wherein the autotransformer (40) includes at least two additional windings (62A, 62B, 62C; 64A, 64B, 64C) having different numbers of turns designed to supply power to the control module (24) at two distinct voltages.

6. A transportation engine including an electrical power supply network (12) and at least one load (14) connected to the electrical power supply network (12) via a power supply interface as claimed in any one of the preceding claims.